

CLAIMS

I claim:

- 1 1. A method of reducing the number of times a tree data
2 structure is rebalanced comprising the steps of:
 - 3 (a) allowing a sub-tree of the data tree structure to grow
4 unbalanced to a threshold level greater than one; and
5 (b) rebalancing the data tree structure when the threshold
6 level is reached.
- 7 2. The method of claim 1 wherein the threshold level is $\log_2 n$
8 for a tree data structure having about n nodes.
- 9 3. The method of claim 1 wherein the threshold level is a
10 constant number of levels greater than a level of a balanced
11 portion of the tree data structure.

1 4. The method of claim 1 wherein the step of rebalancing the
2 tree data structure further comprises:
3 (a) developing first and second sets of rebalancing
4 operation tasks, the first set of operation tasks
5 operable to effect a first set of element state
6 transitions and the second set of operation tasks
7 operable to effect a second set of element state
8 transitions, the first and second set of element state
9 transition being distinct one from the other;
10 (b) performing the first set of operation tasks in a first
11 phase; and
12 (c) performing the second set of operation tasks in a
13 second phase.

14 5. A method of deferring the rebalancing of a tree data
15 structure comprising the steps of:
16 (a) allowing a sub-tree of the tree data structure to grow
17 unbalanced to a length greater than one; and
18 (b) rebalancing the tree data structure when the length of
19 the sub-tree reaches a threshold level.

20 6. The method of claim 5 wherein the threshold level is $\log_2 n$
21 for a tree data structure having about n nodes.

1 7. The method of claim 5 wherein the threshold level is a
2 constant number of levels greater than a level of a balanced
3 portion of the tree data structure.

1 8. A method of deferring the rebalancing of a tree data
2 structure comprising the steps of:

- 3 (a) tracking the performance of operations upon the tree
4 data structure; and
5 (b) rebalancing the tree data structure when an unbalanced
6 sub-tree of the tree data structure reaches a
7 threshold level greater than one.

1 9. The method of claim 8 wherein the threshold level is $\log_2 n$
2 for a tree data structure having about n nodes.